

- Scroll and select functions
- Sealed against dust and particles
- Custom bezels that will blend with HMI grips and control panels
- Optional integrated pushbutton with over three million actuations
- MIL-STD-202 and MIL-STD-810F Compliant
- Standard panel seal
- Choice of cable length and termination

- Scroll & select equipment in industrial and non-automotive transportation applications
- Display selectors
- Hand-grip joysticks



Technical drawing of the Grayhill 62T connector, showing dimensions in inches and millimeters (in brackets).

Top View Dimensions:

- Overall width: 1.758 [44,65]
- Distance from left edge to center of C-bore: 1.500 ± .005 [38,1]
- C-bore diameter: $\varnothing .200 \pm .005$ [5,0]
- C-bore depth: .265 X2
- Distance from center of C-bore to center of thru hole: .327 [8,31]
- Distance from center of thru hole to right edge: .780 [19,81]
- Thru hole diameter: $\varnothing .128 \pm .002$ [3,25]
- Thru hole depth: .020 [0,51]

Side View Dimensions:

- Overall height: .114 ± .015 [2,9]
- Distance from top of housing to center of thru hole: .640 [16,26]

Front View Dimensions:

- Overall width: $\varnothing .950$ [24,13]
- Distance from top of housing to center of thru hole: .485 [12,32]
- Distance from center of thru hole to center of AMP connector: .830 [21,08]
- Distance from center of AMP connector to center of thru hole: .650 [16,51]
- Distance from center of AMP connector to right edge: .515 [13,08]
- Distance from center of AMP connector to left edge: .020 [0,51]
- Distance from top of housing to center of AMP connector: .125 [3,18]
- Distance from center of AMP connector to bottom of housing: 4.00 ± .25
- AMP connector part number: PN 7-215083-6
- Distance from center of AMP connector to right edge: .970 [24,64]
- Radius of bottom corners: R.250 [6,35]

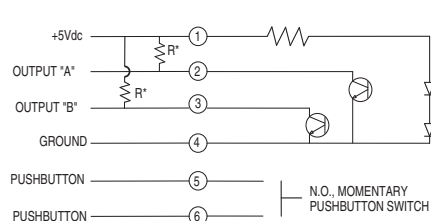
RECOMMENDED PANEL CUTOUT

Panel cutout dimensions:

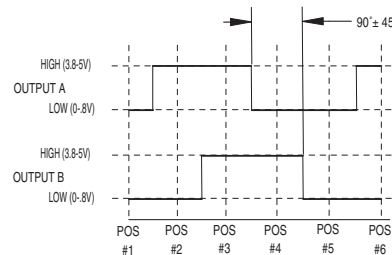
- Overall width: 1.300 ± .005 [33,02 ± 0,12]
- Overall height: 0.660 ± 0.005 [16.76 ± 0,12]
- Distance from left edge to center of thru hole: 0.063 ± 0.005 [1,60 ± 0,12]
- Distance from center of thru hole to center of AMP connector: 1.500 ± .005 [38,10 ± 0,12]
- Distance from center of AMP connector to right edge: 0.063 ± 0.005 [1,60 ± 0,12]
- Thru hole diameter: 2 X 5-40 Tapped Hole

Unless otherwise specified, standard tolerances are:
 Linear ± .025
 Diameter ± .010
 Angle ± 2.0 °

WAVEFORM AND TRUTH TABLE



R* - TWO 2.2K Ω RESISTORS REQUIRED FOR OPERATION.



POSITION	OUTPUT A	OUTPUT B
#1		
#2	●	
#3	●	●
#4		●

● Indicates logic high; blank indicates logic low.
Code repeats every 4 positions.

SPECIFICATIONS

Environmental Specifications

MIL-STD-810F Qualified

Operating Temperature Range: -40°C to 85°C

Storage Temperature Range: -55°C to 100°C

Humidity: 240 hours at 95% humidity at 30°C

Mechanical Vibration: Harmonic motion with amplitude of 15g, within a varied frequency of 10 to 2000 Hz

Mechanical Shock:

Test 1: 100g for 6 ms half-sine wave with a velocity change of 12.3 ft/sec

Test 2: 100g for 6 ms sawtooth wave with a velocity change of 9.7 ft/sec

Pushbutton Electrical and Mechanical Specifications

Rating: 10mA @ 5 Vdc

Contact Resistance: <10ohms

Life: 3 million actuations minimum

Contact Bounce: <4 ms make, <10ms break

Actuation Force: N – None, 7–700g, 10 – 1000g.

Thumbwheel Travel: .060 ± .015 in

Rotary Electrical and Mechanical Specifications

Operating Voltage: 5.00±0.25 Vdc

Supply Current: 25mA Max.

Output: Open collector phototransistor, external pull up resistors are required

Output Code: Two-bit quadrature, channel A leads channel B by 90° electrically during clockwise rotation of the thumbwheel

Logic high shall be no less than 3.8 Vdc

Logic low shall be no greater than 0.8 Vdc

Power Consumption: 125 mW Max.

Mechanical Life: 1,000,000 cycles of operation for Low and Non-Rotational Torque.

500,000 cycles of operation for Medium

Rotational Torque. 1 cycle is a rotation through all positions and a full return.

Average Rotational Torque:

M: 2.2±.75 in-oz, L: 1.2±0.5 in-oz, N: <0.50 in-oz. Initially torque shall be within 75% of initial value throughout life.

Materials and Finishes

Face Plate: Plastic

Housing: ABS Plastic

Side Plate: Reinforced thermoplastic

Wiper: Silicone rubber with adhesive

Gasket: Silicone rubber with adhesive

Wheel: Plastic

Shaft: Aluminum

Slide Springs: Music wire

Detent Spring: Music wire

Detent Balls: Nickel plated stainless steel

PC Boards: NEMA grade FR4. Double clad with copper

Plated with gold over nickel

Pushbutton board is tin plating over copper

LED: Gallium Aluminum Arsenide

Phototransistor: Gold and Aluminum Alloys

Code Section Housing: Reinforced plastic

Detent Housing: Thermoplastic

Code Rotor: Delrin 100 plastic

Dome: Stainless steel

Dome retainer: Delrin 100 plastic

Slide Rods: Stainless steel

Splining Key: Stainless steel

Actuator: Reinforced thermoplastic

Screws: Aluminum or Stainless

Wiper Plate: Copper

Solder: Lead free (96.5% tin, 3% silver, 0.5% copper, no clean)



Series

Angle of Throw: 22 = 22.5° for code change and 16 detent positions

Rotational Torque: N = Non-Detent, L=Low Torque, M=Medium Torque

Pushbutton Option: 0=No Pushbutton, 7=700 grams, 10=1000 grams

Termination: C = .050 Center ribbon Cable with connector

Cable Termination: 040=4.0 inches. Cable is terminated with [Amp Connector P/N 7-215083-6](#).

See [Amp Mateability Guide](#) for Mating Connector details.

Available from your local Grayhill Component Distributor. For pricing and discounts, contact a local Sales Office, an authorized local Distributor, or Grayhill.